LIPOLEIOMYOMA OF THE UTERUS

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Lipoleiomyoma of the uterus is an unusual uterine fatty tumor. This tumor generally occurs in asymptomatic obese perimenopausal or menopausal women [1,2]. Lipoleiomyomas are histologically composed of variable amounts of smooth muscle, fat cells, and fibrous tissue. Fatty metamorphogenesis of the smooth muscle cells of leiomyomas is the most likely cause for the development of lipoleiomyoma [3].

We present a 60-year-old Taiwanese woman who initially presented with postmenopausal bleeding, and was finally diagnosed with lipoleiomyoma of the uterus.

The patient experienced abnormal vaginal bleeding for 3 months. She had a history of using intrauterine devices for 30 years. She experienced menopause at the age of 51 years. She had not received any previous hormone therapy. She visited a local medical clinic where her transvaginal ultrasound revealed a myoma-like mass located on the anterior wall of the uterus. Estrogen and progesterone were prescribed, and vaginal bleeding stopped after hormone therapy. However, vaginal spotting was again noted 2 months before this admission. She took progesterone and estrogen to stop the bleeding. Sixteen days before this admission, vaginal staining was noted again. She visited our clinic where transvaginal ultrasound revealed an oval hyperechoic mass measuring 5.6 × 4.4 cm that was partially encapsulated by a hypoechoic rind and was located on the anterior wall of the uterus (Figure 1). No posterior acoustic shadowing was noted. The endometrial thickness was 0.9 cm. An intrauterine device was present *in situ*. Dilatation, curettage and removal of the device were performed. The pathology showed that the endometrial tissue was atrophic and senile. Although progesterone hormone therapy was prescribed, the vaginal spotting persisted. She subsequently underwent surgery after discussing her options with her doctors.

A laparoscopic-assisted vaginal hysterectomy was performed on August 27, 2007. A well-circumscribed soft mass with a yellow cut surface was found at the uterine body (Figure 2). Microscopically, the tumor proved to be lipoleiomyoma consisting of smooth muscle cells and mature adipose tissue (Figure 3). The postoperative recovery course was uneventful, and she was discharged on August 31, 2007.

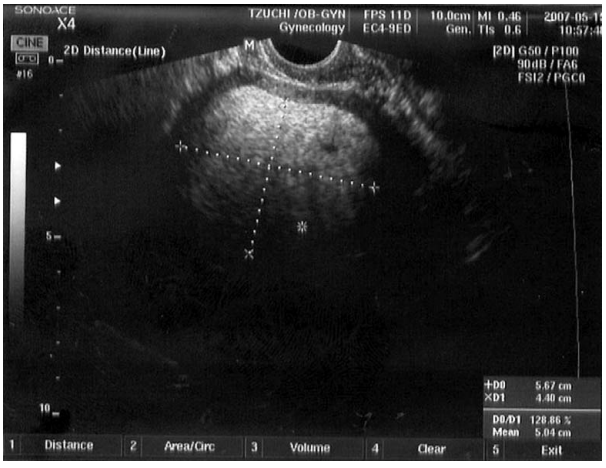

Figure 1. Transvaginal ultrasound reveals an oval hyperechoic mass measuring 5.6 × 4.4 cm that was partially encapsulated by a hypoechoic rind and located at the anterior wall of the uterus.

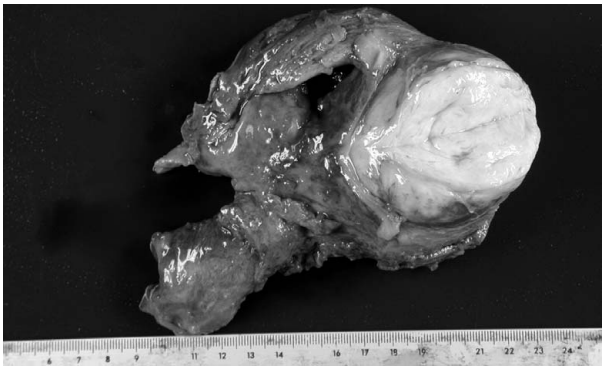

Figure 2. A well-circumscribed soft mass with a yellow cut surface was found in the uterine body.

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Uterine lipoleiomyoma is a rare benign tumor, with an incidence ranging from 0.03% to 0.2% [4]. This tumor is typically found in postmenopausal women and is associated with leiomyoma. The signs and symptoms in the present case included palpable mass, hypermenorrhea and pelvic pain. However, most patients are asymptomatic [5]. The Table presents a review of the previously reported cases.

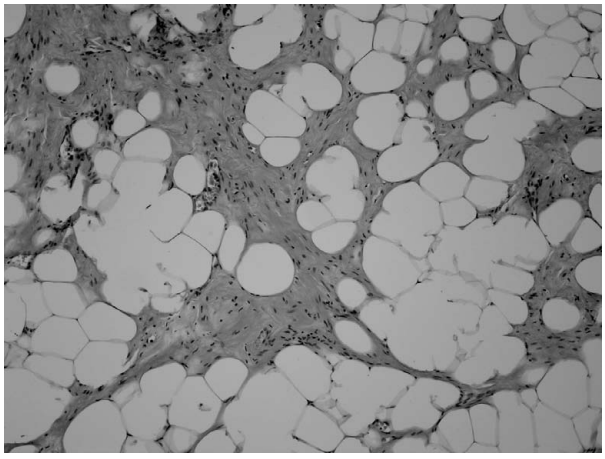

Figure 3. Microscopically, the tumor proved to be lipoleiomyoma consisting of smooth muscle cells and mature adipose tissue (hematoxylin and eosin, 200×).

Uterine lipoleiomyomas are mostly found in the uterine corpus and intramural regions. However, they can also be found in other places such as the cervix or the intravascular region of the broad ligament [7,14]. Histologically, lipoleiomyomas are composed of smooth muscle cells, fat cells and fibrous tissue. Plexiform lipoleiomyomas composed of plexiform leiomyoma with islands of fat cells have also been reported [11].

The differential diagnosis of similar uterine tumors with adipose tissue and spindle cells include spindle cell lipoma, angiolipoma, angiomyolipoma, leiomyoma with fatty degeneration, atypical lipoma, and well-differentiated liposarcoma. In one recently reported series [12], all of the lipoleiomyomas comprised mature adipocytes and smooth muscle cells. No mitotic activity was detected in the tumor. The authors concluded that uterine lipoleiomyomas represent a variant of leiomyomas with adipocyte differentiation, rather than degenerative changes in ordinary leiomyomas [12]. The tumor is considered benign after a 5-year follow-up period [12].

Table. Literature review of lipoleiomyomas

Authors	Year	Age (yr)	No. of cases	Symptoms and signs	Pathologic findings	Imaging findings
Pounder [6]	1982	73–83	3	Palpable mass, postmenopausal bleeding	Lipoleiomyoma	NA
Hashiguchi et al [7]	1994	48	1	Low abdominal pain	Intravascular leiomyomatosis	NA
Tsushima et al [3]	1997	73	1	Palpable mass	Lipoleiomyoma	MRI showed fatin uterine mass
Lin et al [8]	1999	44–63	8	Palpable mass, postmenopausal bleeding	Lipoleiomyoma	NA
Avritscher et al [9]	2001	48	1	Incidental CT finding	Lipoleiomyoma	CT, MRI showed uterine mass with fat component
Aslan et al [10]	2005	39	1	Pelvic tumor	Lipoleiomyoma	MRI showed fat in uterine mass
Morelli et al [11]	2006	57	1	Metrorrhagia	Plexiform lipoleiomyoma	NA
Wang et al [12]	2006	54	50	NA	No mitotic index in tumors, lipoleiomyoma	NA
Loffroy et al [13]	2008	68	1	No symptom	Lipoleiomyoma	CT, MRI showed uterine mass with fat component
Present case	2010	60	1	Postmenopausal bleeding	Lipoleiomyoma	US showed hyperechoic part in uterus

NA = not available; MRI = magnetic resonance image; CT = computed tomography; US = ultrasound.

The sonographic appearance of leiomyomas is a hyperechoic mass that is partially encased by a hypoechoic rind. The rind is thought to represent a layer of the myometrium surrounding the fatty component [4,15]. Computed tomography scans showed a well-circumscribed, predominantly fatty mass with areas of nonfat soft tissue density arising from the uterus [3,14]. Magnetic resonance image can be used to find regions of high signal intensity on T1-weighted images and chemical shift artifacts in the lesion. The fatty components may be confirmed using fat-suppression techniques [3,14,16]. Thus, imaging tools can be used to determine the intrauterine location and fatty nature of lipoleiomyomas.

In conclusion, physicians should be aware that postmenopausal vaginal bleeding is a possible symptom of lipoleiomyoma of the uterus. Surgical management is the primary treatment for tumors complicated with symptoms such as postmenopausal bleeding or a palpable mass causing lower abdominal pain.

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